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Effects of taxes and subsidies on media services

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Abstract

We start out reviewing the justification for press subsidies. The social value of journalism can be larger than what the newspapers are able to extract because of knowledge externalities, public good characteristics of investigative journalism and non-appropriability of consumer surplus. A free market will then underinvest in journalism. Problems related to economies of scale and scope further imply that the number of newspapers and their circulations may be too small, while advertising can give newspapers too strong incentives to aim for the mass market. According to the media economics literature, a preferential VAT regime provides higher differentiation incentives for existing newspapers, while a tax deduction for editorial expenses is well suited to increase journalistic investments. Micro economic theory further indicates that fixed transfers is the most efficient instrument to reduce entry barriers and avoid newspaper mortality, and that a subsidy per copy sold will increase circulation. We end the article by summarizing empirical evidence on the effects of media support.

Keywords

Media support, Two-sided markets, VAT exemption, Tax credit, Direct and indirect subsidies

1 Introduction

Controversies over the role of the press are almost as old as the press itself (Sánchez-Taberno, 2006). Controversies of taxes also have a long history, and for the media industry it dates back to protests against the British stamp duty that was introduced on newspapers in the early 1700s. *The Examiner*, started in 1808, consistently labeled the duty a “tax on knowledge”, and this slogan is still used by the media industry today. Some publishers refused to pay the stamp duty, claiming that the tax restricted circulation of journals to people of high income. Incidentally, there is some evidence that the tax was used at least partly to obstruct the radical press, and thus to reduce newspaper circulation (Simkin, 2012). Modern press policies typically have the opposite objectives. A major aim is to increase circulation and educate the people.

After World War II, a large number of countries started to subsidize domestic newspapers. In particular, press subsidies have been used to halt newspaper mortality since the 1960s and 1970s (see e.g. Picard, 2006). According to Krumsvik (2011, p. 69), government support to media is perceived as a prerequisite for a free press in social democratic countries, while it is perceived as an obstacle for a free press in more market oriented countries. The background for Krumsvik’s claim is an early study by Picard (1985) and more recent studies such as Hallin and Mancini (2004). The latter analyzed public policies towards the media sector in 18 countries in Western Europe and North America. Countries like France, Italy, Belgium, Norway and Sweden were found to have highly interventionist policies, while market forces dominate the newspaper industry in for instance the US and the UK. That being said, also in these countries, newspapers receive substantial subsidies (Nielsen and Linnebank, 2011).

Ideologically driven differences in intervention levels may help to explain why media policies very seldom undergo cost-benefit analysis. Actually, in an evaluation of the Norwegian media support system, Statskonsult (1998) maintained that The Norwegian Ministry of Culture

“in respect of the free press” deliberately avoided formulating measures that would make it possible to evaluate the efficiency of its media policy.¹ It is not immediately clear that the ideal of an independent and critical press is a good argument for not analyzing whether policies work or not. However, it does give support to Picard’s (2007) claim that “The Nordic model appears to be based more on rhetoric and good intentions than actually producing and operating a system of support that leads to the desired outcomes.” Unfortunately, it is reasonable to believe that this is true for media support systems in most countries. Sánchez-Tabernero (2006, p. 24), for instance, argues that France leads the way in using a protectionist media policy “for reasons of cultural tradition”.

It is customary to distinguish between direct and indirect media support (Picard and Grönlund, 2003). In contrast to direct aid, indirect aid does not enter as observable items in a firm's financial statement. Earlier, reduced postal and telecommunications rates used to be important forms of indirect support, but at present the dominant vehicle is reduction of, or even exemption from, value-added taxes (VAT). Support which is given to all firms within some broad guidelines is labeled general, while selective aid is targeted to specific recipients.

It is widely believed that general indirect general aid (like reduced value-added taxes on newspaper sales) is less likely to be subject to political capture than direct aid; in particular, one might expect that newspapers that depend on selective direct aid would hesitate to bite the hand that feeds them, the government. However, there is no consensus as to how serious this problem is in practice. De Bens and Østbye (1998, p. 14), for instance, argue that there are no indications that subsidies make the press less critical. On the contrary, they argue that some of the most critical voices against governments depend on press subsidies to survive. Others are much more sceptical (see Sánchez-Tabernero, 2006, for a good discussion), and in an evaluation of Norwegian press subsidies Skogerbø (1997, p. 102) notes that “...the close

¹ See Krumsvik (2011, p. 93).

relationship between the press and the political parties is one reason why it was possible to muster widespread support in favor of a system that has continuously been criticized for undermining both press freedom and freedom of competition”.² In a recent review of the literature on the political economy of mass media, Prat and Strömberg (2011) argue that “different sources of evidence provide support for the idea that ownership plurality is the most effective defence against capture”.

The rest of this article is organized as follows. In Section 2 we summarize some common welfare economics arguments for why it may be optimal to subsidize media firms. We limit our attention to newspaper support though many of the arguments also hold for television and radio (public broadcasters are the biggest recipients of media support in many countries). In section 3 we present a theoretical framework for analyzing the effects of taxes and subsidies on newspapers’ pricing behavior, quality investments and differentiation incentives. We also discuss their usefulness in ensuring newspaper survival. Our main focus is on literature which considers indirect media support, as this is more demanding to analyze than direct support (e.g. pure money transfers). In section 4 we present some empirical work on the effect of subsidies. Most of this literature discusses direct subsidies. As pointed out by Humphreys (2006, p. 39) indirect subsidies often involve “impressively large sums”, but they have nonetheless tended to be uncontroversial. This is presumably a main reason why there exist only a few studies on the effects of indirect subsidies. In section 5 we sum up and discuss some avenues for future research that seem particularly promising and important.

2 An economic justification for media support

Traditionally, media support has been justified by the claim that widespread reading of newspapers promotes the national language and culture, and that a diversity of newspapers is

² Quotation from Sánchez-Taberner (2006, p. 42).

important for freedom of speech and democracy. There is a lot of truth in these arguments, but it is not self-explanatory why they call for government interventions.

In a market economy, subsidies are used to correct market failure. A modern media support scheme should be based on this principle. Economic theory suggests that one should start the analysis with an accurate description of the market failure. When the market failure is identified, one should design schemes that directly address the inefficiency. However, one should be aware that not all market failures can be corrected, and that one usually faces a trade-off between market failure and various forms of government failures. In particular, one may worry that media support appear preservative, as emphasized by e.g. Picard (2007) and that it leads to media capture.

Market failure in the media industry can take many forms. The most obvious can be identified from economic theory of knowledge and information, hereunder economies of scale in knowledge production, pure and pecuniary knowledge externalities, public good aspects of investigative journalism and network externalities associated with small language communities. Another important source of market failure is associated with the theory of imperfections in two-sided markets. Newspapers are platforms that internalize externalities between readers and advertisers, but there is no guarantee that they will do this in an optimal way from a welfare theoretical point of view. The structure of the newspaper market is such that one cannot expect that a free market will produce the right amount of journalism, nor that the quality and editorial choices will be optimally adapted to the demand.

2.1 Pure knowledge externalities

2.1.1 Externalities between newspapers

Journalists are knowledge workers. The main reason for subsidizing production of knowledge, for example through support for R&D, is that those who generate knowledge

rarely reap the full benefit of their work. One reason for this is that it is expensive to generate new knowledge, but relatively easy to copy, distribute and build on others' knowledge once it is made available (Arrow, 1962; Romer, 1990). In the media world this is illustrated by the fact that many online newspapers and free of charge newspapers more or less live off copying material from others. It is not completely free to make a newspaper this way and news decreases in value when it is no longer fresh and exclusive, but there is little doubt that the reuse of material generates large values that do not accrue to the editorial staff that originally produced it. Another variant of the same mechanism is that editors build on each other's stories. When editorial staff are considering whether to look into an issue, they do not take into account that they also create value for other editors who with moderate additional investments can continue to pursue the case with their own approach. These are examples of what economists call "pure knowledge externalities".³ The extent of externalities between different media is illustrated in Lund (2001), Lund *et al.* (2009) and Erdal (2010). Lund studies the national news flow in Denmark – what he coins the "journalistic food chain" – during one week in 1999 and again during the same week in 2008. The detailed empirical analysis is based on more than 100 000 news items from traditional newspapers, internet newspapers, magazines, news agencies, radio and TV, and it documents that news spread across different media to a large and increasing extent. In 1999 42 % of about 32 000 news items were

³ Normally one thinks of knowledge externalities as positive. For the sake of completeness it should be mentioned that one can also think of negative externalities that result in overinvestment in knowledge development in a free market. For example two companies can invest in the same research in the hope of becoming the first to patent or copyright the product. A parallel in the media world would be newspapers chasing the same news. The parallel is not perfect, however. Two journalists who write about the same case control one another. In the absence of journalist number two, one journalist would easily be able to distort the truth. Gentzkow and Shapiro (2008) give an overview of the literature on "truth-telling" and the importance of competition in the news market.

categorized as “recycled, borrowed or stolen” while in 2008 this category accounted for 64 % of about 75 000 news items. The low cost of disseminating news online is probably a contributing factor to the growth. In a similar study, Erdal (2010) maps the flow of news in Norway and finds that about half of the articles in the national newspapers were produced by in-house editorial staff, while the other half was redistribution of material from other newsrooms.

2.1.2 Externalities between citizens

Readers buy newspapers to keep up to date. In part, this is consumption, not very different from other types of entertainment, but newspaper reading also helps to maintain people’s literacy and strengthen their knowledge base. This may be considered an investment in human capital. A person who never reads newspapers or otherwise stays updated on what happens in society is likely to be inhibited both within and outside of the workplace, and is likely to be vulnerable in restructuring processes. In a welfare society, this will have negative effects on other taxpayers. Moreover, such persons will not be able to manage their democratic rights in a satisfactory way. Informed citizens make better decisions, not only for themselves but also for their children and in politics. Hence, the whole community benefits to some extent from high levels of newspaper circulation. If the price of newspapers is initially high and newspaper consumption low, the social return on newspaper subsidies that increases consumption among groups with low purchasing power may be positive. It may also be desirable to subsidize certain types of newspaper contents that are little in demand because of low consumption value, but which have high information value. This is analogous to advertising. The government pays newspapers to give column space to important and useful information which is added to the material that the readers want (Bruns and Himmler, 2011, p. 472).

2.2 Investigative journalism as a public good

At the outset, public goods must be provided collectively because the benefits they generate cannot be easily confined to those who pay for them. Not only are they non-excludable, but they are also non-rivalrous, meaning that one person's use does not reduce the availability to others. Classical examples of public goods are flood control systems, street lighting and national defence. These are only to a small extent produced in private markets because it is expensive or impossible to charge anyone for them.

Critical and investigative journalism is expensive to produce and has properties of being a public good because it promotes efficient use of resources in the public sector. Good journalism ensures the quality of many large and small decisions that civil servants and local government employees make on behalf of society every day. All citizens benefit from this, not only those who pay for and read newspapers. In most developed countries, government expenditures are in the order of 30-50 percent of GDP. It is also common that governments manage large public funds, and have significant ownership stakes in private sector companies. One can hardly overestimate the value to society of having the enormous cash flows generated by government consumption, transfers and investments monitored and debated constantly. Good journalism also contributes to building of institutions and inhibits negligence, unethical behavior and crime. Bhattacharyya and Hodler (2010) find that countries with valuable natural resources more frequently face problems with corruption than other countries, but that high quality of the democratic institutions counters the problem. In extreme cases, the economic consequences of a weak media can be very dramatic. The financial crisis in Iceland in 2008 was no natural disaster, but a result of poor political handling and economic wrongdoings that could have been uncovered by the media. Much the same can be said about the financial problems that have developed in Greece.

The importance of the media for local democracy has recently been empirically documented by the German economists Bruns and Himmler (2011). They emphasize that radio, television and the internet are alternative sources of information about the national politics, but local newspapers dominate when it comes to monitoring the local decision making. Their data material covers 150 Norwegian newspapers and more than 400 municipalities in the years 2001 to 2005. They view Norway as an interesting laboratory because the country has both high newspaper coverage and a decentralized management structure with many small municipalities. After having controlled for observable differences between the municipalities such as size, population density, income and education level, as well as possible unobserved permanent differences in efficiency, Bruns and Himmler find a positive correlation between the distribution of local newspapers and efficiency in the municipal sector. Their municipal efficiency indexes take into account both quantitative and qualitative aspects of 17 types of municipal services. The measured effect is reinforced when they weight the newspaper distribution in each municipality with a measurement of how much municipality-specific information the various newspapers contain. Moreover, they find that the effect is particularly strong in small municipalities, defined as municipalities with fewer than 10 000 inhabitants.

2.3 Consumer surplus

Another form of market failure relates to the concept of consumer surplus. Even if newspapers were perfect monopolies and could charge for all re-use of material, they would not be able to extract the individual reader's full willingness to pay without requiring a different payment from each reader. Such perfect price discrimination is impossible to achieve in practice. Simply put, there may be one or more buyers who think the product is just worth its price and who will not buy the newspaper if it costs more. Most readers, however, will tolerate a moderate price increase. For these customers, the value of the product is higher

than the price. This implies that there will exist journalistic projects that are not undertaken despite the fact that the total value for readers is higher than the cost of producing the material.

If we look at a possible newspaper article as a product of knowledge, it is easy to imagine that the value for some readers may be far higher than the Euro or so that it costs. An example might be so-called consumer journalism that provides guidelines to the individuals before major purchases. The consumer surplus that newspapers generate for private individuals, however, may not be very different from the consumer surplus generated by other products. For business customers, on the other hand, the value of newspapers may be much higher compared to the price. Through the media, businesses obtain information on trends, business partners, customers, competitors and new markets. Moreover, when business journalists follow companies with employed management, they produce valuable governance information for the owners.

2.4 Economies of scale and scope

The cost structure in the media industry gives rise to significant economies of scale and scope. As with many informational goods, the bulk of the cost is associated with producing the first copy (hence there are high fixed costs) while it is relatively cheap to distribute additional copies to new readers on the same or different platforms (i.e. there are low marginal costs). For digital media, the marginal cost – the cost of serving the marginal reader – is equal to zero. For printed newspapers, the marginal cost is greater than zero, but fixed costs such as rent, salaries, etc., are clearly more important than costs associated with printing and distribution of extra copies. This type of cost structure creates some challenges.

First of all, the fixed costs mean that it is not possible for a newspaper to survive without reaching a critical level of revenue from advertising and readers. This implies that in

small markets, it may not be possible to operate even one newspaper at a profit, and in medium size markets, it is difficult to establish competitors to an incumbent player. More generally, large fixed costs act as a barrier to entry. This problem is arguably particularly severe in the media sector, since newspapers with much smaller circulations than their rivals may find it difficult to attract advertisers (which in turn could make the newspapers even less attractive for the readers) ⁴. The result can be monopoly formation and little diversity. This may justify support for small local newspapers, start-ups and so-called No. 2 newspapers, i.e. newspapers that are second in circulation in their market.

A second and related challenge caused by large fixed costs is that in order to survive, even idealistic-run newspapers must charge a price that is higher than marginal cost (unless advertising revenue is very high). This implies that there will be readers who have a willingness to pay that exceeds the cost of producing an extra copy, but who nonetheless will be excluded. This leads to a welfare loss in the form of reduced newspaper reading and is an argument for using subsidies to reduce the actual price of the printed newspaper. In this respect, zero pricing is a positive aspect of free newspapers online.⁵ Online newspapers are in reality public

⁴ See Gustafsson (1978) and Gabszewicz *et al.* (2007) for a discussion of the so-called circulation spiral.

⁵ In general, there is a trade-off between “static” and “dynamic” efficiency. Simple economic analysis suggests that the price of knowledge already developed should be close to zero, so that everyone that can benefit from the knowledge will have access to it. From this perspective, online newspapers are correctly priced. The problem is that such pricing leads to dynamic or long-term inefficiency. Who will invest in developing material if they do not get paid? This is the problem newspapers face today. They are not able to charge readers as much as before, and they have also lost a lot of the advertising market to the Internet. This undermines the journalistic production, and is an argument for increased public support. For radio and television the development has gone in the opposite direction. From the start it was not possible to charge user fees, and with insufficient advertising revenue, public funding of public

goods, and they have most likely increased total newspaper consumption even though the effect on the printed newspaper circulation has been negative. From a democratic and income distribution perspective, it is especially valuable that online newspapers reach out to groups with low purchasing power. The problem with free newspapers is that both the quality and the diversity will be badly affected. We return to this issue later.

Economies of scale are used to justify subsidies also to other media products than newspapers. Examples include books, films and music. The argument is that the high fixed costs associated with producing the first issue provides little width and cultural diversity. On the other hand, it must be noted that there are many markets where economies of scale are significant without the producers receiving subsidies, and one can imagine situations where the market conditions are such that too many different varieties are produced so that economies of scale are utilized to an insufficient extent. This can happen because some of the profits that new products generate do not represent a welfare gain to society, but are simply a transfer of income from competitors who lose customers.

Although economic theory does not provide an unambiguous basis for determining whether a free market produces too much or too little diversity of newspapers, we observe that increased diversity is a common political goal used to justify press subsidies. If this goal is interpreted as an outcome of a democratic process, it indicates that citizens want more diversity than the free markets can offer.

2.5 Language as network externality

Press subsidies may also be used for linguistic policy reasons, e.g. to promote minority languages or local languages in small language areas. This may be justified on the grounds that

broadcasters was essential. Paternalistic and democratic considerations also played a role when many countries chose to run broadcasters in the public sector, e.g. the BBC in Britain.

the use of a particular language represents a so-called network externality that benefits other users of the same language. The classic example of a good that creates network externalities is the telephone. No-one benefits from having access to a phone unless there are other people who also have phones. Moreover, when new users connect to the network, the value of having a phone increases for all existing and potential users. Similarly, a language is not useful unless it is understood and used by others. This may create evil and good circles of use. If few people use a particular language today, even fewer will use it in the future – and if many people use a particular language even more people will use it. A large language area also provides a greater market and better opportunities for the exploitation of economies of scale. When a “linguistic network” is in place with sufficiently many users, however, there is no need for subsidies.

2.6 Credit market imperfections

During periods of rapid changes in technologies and market conditions, it is commonly argued that governments should provide funds to help firms adjust to new environments (e.g. helping traditional newspapers to transform to the digital area). In the absence of market failure, this is not a valid argument. Financial markets would then provide funds if and only if such an adjustment is profitable (in expectation). However, credit market imperfections create inefficiencies that might call for public interventions and subsidization. A problem, though, known both from micro- and macro analyses, is that such aid has strong tendencies to become permanent. This may prevent modernization and productivity. The media industry is not very different from other industries with respect to arguments in favor of, and against, infant industry support and support for restructuring of incumbent firms. We do therefore not pursue this topic any further from a theoretical point of view. Some empirical evidence is discussed in Section 4.

2.7 Externalities in two-sided markets

Media economic research has accelerated in recent decades, and this is partly due to the development of theories on two-sided markets. There are numerous examples of important two-sided markets, such as credit cards, software and browsers.⁶ None of these markets can be understood without explicitly taking the two-sidedness into account, and it has been claimed that one reason why Apple nearly went bankrupt before the company was revitalized was their lack of knowledge about the mechanisms of two-sided markets. Similarly, it may be argued that knowledge on two-sided markets is necessary in order to understand the impact of various media political initiatives.

Somewhat informally, we have a two-sided market if there are (a) two or more customer groups for a given product, (b) positive network externalities from at least one customer group to another, and (c) there is a platform that internalizes the externalities.⁷ Newspapers obviously operate in a two-sided market, since they sell their products to both readers and advertisers. The gain from advertising in a newspaper will typically be higher the greater the number of readers, but this is an effect that no single reader takes into account when buying a newspaper. Hence, we have a positive externality from the reader side of the market to the advertiser side. We might have positive externalities also from the advertiser side to the reader side. This is true if a reader's valuation of a newspaper is increasing in the advertising volume, for instance because the ads provide information on local offers and activities. If readers in general dislike advertising, on the other hand, we have negative externalities. In any case, the newspaper is a platform that must find a business model which internalizes the externalities between the advertisers and the readers. A newspaper will, for

⁶ Evans (2003a, 2003b) provides a useful and interesting classification and discussion on different types of two-sided markets.

⁷ See Rochet and Tirole (2003) for a more precise and formal definition.

instance, typically choose lower subscription prices than those that would maximize revenues from the reader side of the market, since they thus increase advertising revenues by attracting more readers. This is a simple and straightforward mechanism. However, the interrelationship between the two sides of the market makes it challenging to see what the effects of e.g. reduced-rate value-added taxes really are, as they affect prices, profiles and quality choices. Since the formal literature which analyses these issues is new, we shall use the next section to develop a theoretical framework that allows a unified analysis of some stylized press support schemes.

3 The effects of taxes and subsidies: A theoretical framework

Based on the discussion of market failures in the previous section, we take as a premise for the rest of this chapter that the newspaper market with no policy interventions gives:

- 1) Too small circulation of existing newspapers
- 2) Too few titles
- 3) Too small investments in journalism and other factors that increase the quality of the newspaper
- 4) Too little media diversity

We start out by reviewing theoretical findings on the effects of VAT reduction, which most likely is the largest component of worldwide press subsidies. It also seems to be the component of press subsidies whose effects are least understood.

3.1 Value-added Taxation in Two-sided Markets

3.1.1 Price and quantity effects of value-added taxes

The traditional argument for levying low indirect taxes (VAT in Europe) on newspapers is that this reduces the cover price and thus increases newspaper circulation. To see the argument formally in an intuitive way, let us abstract from the two-sidedness of the market and consider a media firm which sells N copies of a newspaper at price p^N . The inverse demand curve for the newspaper is downward-sloping in own quantity, such that we have $p_n^N(n) \stackrel{\text{def}}{=} \frac{\partial p^N}{\partial n} < 0$ (subscripts henceforth denote partial derivatives). Labelling the ad valorem tax rate by t , this implies that the media firm receives the price $p^N/(1+t)$ per copy it sells of the newspaper.

The newspaper's profit level is given by

$$(1) \quad \pi = \frac{np^N(n)}{1+t} + R(a) - C(o),$$

where a is the newspaper's advertising volume, $R(a)$ advertising revenue and $C(o)$ is the cost function. We assume that the cost and demand functions are well behaved, and that the second-order conditions for profit-maximization hold.

The media firm maximizes profits with respect to the advertising volume (a) and newspaper circulation (n). Starting with the former, we find that $\partial\pi/\partial a = 0$ implies

$$(2) \quad R'(a) = C_a.$$

This simply says that marginal revenue of selling ads is equal to marginal costs in optimum. The first-order condition for newspaper sales ($\partial\pi/\partial n = 0$) is likewise given by

$$(3) \quad \frac{p^N + np_n^N}{1+t} = C_n.$$

A positive VAT on newspapers ($t > 0$) reduces the marginal revenue of selling newspapers but does not affect the marginal revenue of selling ads. Differentiating equations

(2) and (3) with respect to t therefore shows that the advertising volume is independent of t ($\partial a/\partial t = 0$). However, the higher the VAT rate, the higher is the price that the readers have to pay, and the smaller therefore newspaper circulation will be⁸:

$$(4) \quad \frac{dn}{dt} = \frac{-C_n}{-\pi_{nn}(1+t)} < 0 \text{ and } \frac{dp^N}{dt} = p_n^N \frac{dn}{dt} > 0.$$

The signs in (4) follow from the fact that the second-order conditions require that $\pi_{nn} < 0$ and support the conventional view that newspaper prices will fall and the circulation increase if the VAT is reduced. Equation (4) further makes it clear that the smaller the marginal costs of producing (and distributing) newspapers, the less the circulation will fall. If marginal costs are negligible ($C_n \approx 0$), then the VAT rate has almost no effect on price and output. In this case the VAT rate is equivalent to a surplus tax. This is of particular importance if we consider electronic newspapers, where marginal costs are very close to zero. Other things equal, this says that the price of electronic newspapers is independent of the VAT rate (making VAT act as a surplus tax, see below).

The problem with the above analysis is that it does not take into account the two-sidedness of the market. To incorporate this as simply as possible, we hold on to the assumption that newspaper readers are indifferent to the ad level in the newspaper (this is not a critical assumption; see Kind *et al.* 2008).⁹ However, we assume that demand for ads is increasing in newspaper circulation ($\partial a/\partial n > 0$). This means that $R(\phi)$ is a function of n , such

⁸ Here we have implicitly assumed that $C_{an} = 0$ (which means that the newspaper's marginal costs of inserting an ad are independent of the circulation). This simplifies the analysis, but is an innocent assumption in our context.

⁹ Empirical analysis does not give a definite answer as to whether readers perceive ads as a good or a bad (this is in sharp contrast to commercials on TV, which generally are perceived as a nuisance). See, for instance, Ferguson (1983), Blair and Romano (1993), Sonnac (2000), and Wilbur (2008).

that the solution to $\partial\pi/\partial n = 0$ is given by $\frac{p^N + np_n^N}{1+t} + R'(a)\frac{da}{dn} = C_n$. To clearly see the implication of this, assume that we have a downward-sloping inverse demand curve also for ads, such that we can write $R(a) = ap^A(a)$ with $p_a^A < 0$. Then the equivalent of (3) becomes

$$(5) \quad \frac{p^N + np_n^N}{1+t} + ap_n^A = C_n,$$

which shows that the marginal revenue of selling newspapers is greater in a two-sided market than in a one-sided market. This is true since the externality term ap^A on the left hand side of equation (5) is positive. The intuition is that the advertisers' willingness to pay for an ad increases with p_n^A units if one more reader buys the newspaper, and this creates a gain equal to ap_n^A for the newspaper when it sells a units of ads. This formalizes the claim that newspaper circulation is higher the more important it is for the advertisers to reach a large audience.

Now, differentiating (2) and (5) with respect to t we find

$$(6) \quad \frac{dn}{dt} = S \frac{ap_n^A - C_n}{-\pi_{nn}(1+t)} \quad \text{and} \quad \frac{dp^N}{dt} = p_n^N \frac{dn}{dt},$$

where the second-order conditions require that $S > 0$.¹⁰ This means that $dn/dt > 0$ and $dp^N/dt < 0$ if $ap_n^A - C_n > 0$. We may thus get the seemingly paradoxical result that a higher VAT on newspapers increases sales and reduces the price that the readers have to pay. The intuition is that if the value on the advertising side of the market of capturing one extra reader, ap_n^A , is greater than the marginal costs of serving that reader, C_n , then it is profitable to reduce the newspaper price marginally. Thereby the readership increases, allowing the media firm to sell more advertising and make a higher profit than if it increased the price and reduced

¹⁰ The variable S is equal to $\pi_{aa}\pi_{nn}/H$, where H is the Hessian matrix.

the output of newspapers. Total profits for the newspaper certainly falls subsequent to the tax increase, but it makes higher profits on the advertising side.¹¹

What happens to the advertising level and advertising price depends on the exact shape of the demand and cost function, which we will not discuss here (see Kind *et al.*, 2008, for an analysis). However, it can be shown that both the advertising level and newspaper sales might increase under reasonable assumptions. If this happens, it is welfare improving to have a positive VAT rate on newspapers. The media firms will lose, but both the readers and the advertisers gain, because the media firm reduces the newspaper price in order to attract more readers and more advertisers. Such positive welfare effects of taxation could never be observed in a one-sided market, unless we consider goods which impose negative externalities such as pollution.

To see that the results above are not just theoretical curiosities, assume that t approaches infinity. Obviously, the newspaper would then have no reason to charge a positive consumer price. However, the newspaper might still be profitable, since it has the option of raising revenue through the advertising market and give the newspaper away for free. This, obviously, is another fundamental difference between the effects of taxation in one-sided and two-sided markets; a higher VAT in a one-sided market can never increase sales, and profits can never be positive if the VAT rate becomes sufficiently high. Contrary to a firm operating in

¹¹ Differentiating the equilibrium value of eq. (1) with respect to t , and using the envelope theorem, we find $d\pi/dt = -p^N(n, a)n(1+t)^{-2} < 0$ so the profit level is strictly decreasing in the tax rate. However, the marginal change in profits earned in the ad market is $(ap_a^A + p^A)da/dt + p_n^A dn/dt$ which is positive if quantity responses are positive (i.e., $ap_n^A - C_n > 0$).

a one-sided market, firms operating on a two-sided platform can reduce their tax burden by shifting revenue to the side of the market where the tax rate is unchanged.¹²

Whether the condition $ap_n^A - C_n > 0$ holds, implying that increased VAT *reduces* the price of newspapers, is an empirical question. There are high fixed costs in the media sector, but the marginal cost of a newspaper copy is relatively low (and zero on the internet). It should further be noted that advertising is the primary or only source of income for some media outlets, indicating that ap_n^A is relatively high. Hence, it is not inconceivable that $p_n^A - C_n > 0$. The main takeaway from the above analysis, however, is that reduced-rate VAT-regimes are not likely to be an effective means of reducing newspaper prices. Another important takeaway is that the VAT-rate affects to what extent newspapers have to rely on advertising revenue. This has implications for media pluralism as we show in the next section.

3.1.2 *Value-added taxes and differentiation incentives*

The workhorse for analysing differentiation incentives in economics is the Hotelling model. Let us briefly go through the main ingredients in the standard set-up; details can be found in most text books on industrial organization (e.g. Tirole, 1988). First, consumers are heterogeneous along one dimension. To be specific, assume that they differ in political opinion, and that their preferences are uniformly distributed along a line with length equal to one. This “Hotelling line” is illustrated in Figure 1. Extremely left-wing readers are at or close to point 0 on this line, extremely right-wing readers at or close to point 1, while those with more moderate views are located somewhere in-between. Suppose that there are two newspapers, $i = 1, 2$, and that each consumer buys one and only one of them. The location of newspaper 1 is given by point X_1 (such that it is relatively, but not extremely, left-winged),

¹² See Fullerton and Metcalf (2002) for an overview over the tax incidence literature in one-sided markets.

while its more right-winged competitor is located at point X_2 . For the moment we shall let the newspapers be advertising-free, such that they raise profits only through the price p_i that they charge from the readers (meaning that it operates in a one-sided market). Following the standard set-up, let the utility of a consumer who is located at some point x on the line and who buys newspaper i be given by

$$(7) \quad U_i = v + q_i - p_i - w(d_i - x)^2,$$

where $d_1=x_1$ and $d_2=1-x_2$. The parameter $v > 0$ is a positive constant which we assume is sufficiently large to ensure that all readers buy one (and only one) newspaper, w is a measure of the intensity of the consumers' preferences, and q_i is the perceived quality of newspaper i .

The newspapers can increase the perceived quality by investing in journalism, and the profit function of newspaper i equals $\pi_i = (p_i - c)D_i - \varphi q_i^2/2$, where $\varphi q_i^2/2$ is the cost of investing in journalism ($\varphi > 0$) and D_i is demand. Now, consider a two-stage game where the newspapers first choose locations non-cooperatively and then compete in prices. With this formulation it is well known from the literature (see e.g. Tirole, 1998) that there will be maximal differentiation, such that the firms will locate at each end-point on the line ($x_1=0$, $x_2=1$). The reason is that each newspaper will have a strategic incentive to move away from its rival; by doing this, the competitive pressure falls. Thereby the firms can charge higher prices, and make higher profits. From a policy point of view, it is important to note that since value-added taxes do not affect the strategic interactions between the newspapers, the locations (newspaper profiles) are independent of the tax rate. However, as is always the case in one-sided markets, the price that the readers have to pay is strictly increasing in the tax rate if marginal production costs are positive ($p_i = w + c(1 + t)$). It can further be shown that investment in journalism is strictly decreasing in the tax rate ($q_i = \frac{1}{3\varphi(1+t)}$). The reason for this is that taxes reduce the newspaper's profit margin on each copy it sells, and therefore the incentive to capture new readers by investing more in journalism falls.



The model above does not tell us much about how firms that receive revenues both from advertisers and readers will locate. It is challenging to analyse the choice of location in two-sided markets formally, but among the first ones to succeed with this were Gabszewicz, Laussel and Sonnac (2001, 2002). An important innovation in their work is to add a third stage to the game, where the newspapers set the price of ad inlets.¹³ The advertisers are assumed to be heterogeneous, and might buy ads in one, both or none of the newspapers. Gabszewicz *et al.* abstract from investment issues and assume that the readers are indifferent to the ad level. The analysis is nonetheless algebraically complex, and they arrive at two corner solutions; either maximum or minimum differentiation. If the readers have strong political preferences and/or the advertising market is small, the newspapers will be maximally differentiated. Otherwise, they will be minimally differentiated (i.e., locate at the midpoint of the line), and only rely on advertising revenue. The intuition for their result is most easily grasped by noting that since the readers are indifferent to the ad level in a newspaper, there are no strategic reasons to differentiate with regard to the advertising market. On the contrary, if the newspapers are located at points x_1 and x_2 , newspaper 1 will steal readers from its rival and thus increase advertising revenue if it moves just to the left of newspaper 2. A similar argument applies for newspaper 2, and therefore they end up being located at the centre of

¹³ It can be shown that within the Hotelling framework, it is irrelevant for the location of the firms and their profits whether there is an advertising market (and how large it is) if newspaper prices and advertising prices are determined at the same stage. This is due to some peculiarities of the Hotelling model. See Gabszewicz *et al.* (2001, 2002), Anderson and Coate (2005) and Peitz and Valetti (2008) for discussions.

the line if the advertising market is sufficiently large. This highlights the potentially important aspect that we might expect media pluralism to be small if newspapers to a large extent have to rely on advertising revenue.

Gabszewicz *et al.* did not consider tax issues; this is the topic in Kind *et al.* (2012). Using insight from Anderson and Coate (2005) they simplify the advertising side of the market. They also differ from Gabszewicz *et al.* in that they set up a game where the newspapers determine quality investments and locations at stage 1, advertising prices at stage 2, and cover prices at stage 3.¹⁴ The newspapers' profit functions are given by

$$(8) \quad \pi_i = \left(\frac{p_i}{1+t} - c \right) D_i + R(a) - \frac{\varphi}{2} q_i^2,$$

where advertising revenue is given by $R(a) = p^A(a_i) a_i D_i$, and the inverse demand curve for ads is specified as $p^A(a_i) = \alpha - a_i$. The greater is α , the greater is thus the advertisers' willingness to pay for ad inlets, and the higher will the newspapers' advertising revenue be in equilibrium.

In contrast to Gabszewicz *et al.*, this model generates interior solutions with respect to location (unless the advertising market is too large or too small), and the more important the advertising market is, the closer to the mid-point of the line the newspapers will locate. The effects of increasing the tax rate is as follows

$$(9) \quad \frac{dx_i}{dt} = \frac{\alpha^2}{16t} > 0, \quad \frac{dp_i}{dt} = c - \frac{\alpha^2}{8} \geq \leq 0 \quad \text{and} \quad \frac{dq_i}{dt} = \sigma \left(\frac{8}{3} \frac{dx_i}{dt} - \frac{1}{1+t} \right) \geq \leq 0.$$

In equation (9) σ is a positive parameter. A higher VAT rate increases the relative importance of the advertising market, bringing the newspapers closer to the centre of the line.

¹⁴ Kind *et al.* (2010) use the original timing of Gabszewicz (2001, 2002) and show that the higher is the tax rate, the more likely it is that the newspapers will be minimally differentiated. Perhaps somewhat surprisingly, they show that this holds independent of whether readers consider ads as a good or a bad.

A higher tax rate thus implies that both newspapers will focus more on the mass market and become less differentiated. However, the fact that they become less differentiated also means that the competitive pressure increases, and if the advertising market is sufficiently large, the newspaper price will fall subsequent to the tax increase. The same is true if marginal costs are sufficiently small (and if $c = 0$ we always have $\frac{dp_i}{dt} < 0$). Note that these competitive reasons for reducing the newspaper price come in addition to the effect discussed in the monopoly model above. Another interesting finding in equation (9) is that a higher tax rate might increase quality investments, in sharp contrast to what we find in one-sided markets. This happens if $\frac{dx_i}{dt}$ is sufficiently large. The intuition is that if newspapers become less differentiated, then each of them will have an incentive to invest more in quality (and charge a lower price) in order to steal business from their rival. If this business-stealing effect is strong, then we cannot disregard the possibility that it dominates over the effect discussed above, namely that the newspapers will invest less since the profit margin falls.

Summing up, the sparse literature that exists on indirect taxation in two-sided markets suggests that the price-reducing and quantity-increasing effects of the low-rate tax regimes on newspapers are at best weak. At the outset this might seem surprising, but it is important to bear in mind that, other things equal, a change in the VAT rate in one-sided markets will have no effect on price or quantity if marginal production costs are equal to zero (as shown above). Bearing this in mind, it is perhaps not too surprising that once we bring the two-sidedness into the analysis, the advertising market might make it optimal to reduce the prices.

3.2 Tax credit for editorial costs

Although VAT exemption and reduction is by far the most important type of indirect media support, it is not difficult to envisage alternative tax reliefs that could correct for the market failures we discussed in chapter 2. We have argued that a free market is likely to

underinvest in journalism. It then follows directly from optimal tax theory that journalism should be taxed at a lower rate than other activities without such positive externalities. This is exactly what McChesney and Nichols (2010) suggest in a recent book discussing the need for press subsidies in the United States. They propose a “journalist tax credit”. A similar proposal was put forward by a committee commissioned to design a new media support model for Norway (NOU, 2010). The committee was unable to reach a consensus, but the committee’s chairman and his fraction proposed to partly replace VAT exemption for printed newspapers with a tax credit for editorial costs. The idea was to create a “platform neutral” subsidy scheme, where newspapers and news magazines were eligible regardless of whether their editorial product is distributed on paper or in digital form. The Norwegian committee was inspired by R&D tax credits schemes which have gained popularity in OECD countries over the last decades. The justification for R&D tax credits is positive knowledge externalities of the same type as those created by journalism. The Norwegian government has not yet decided whether they will go for the new model, but in France journalists already benefit from a tax deduction.¹⁵ Even though the tax rebate is given directly to the journalists, it will have much of the same effect because it lowers the cost of hiring journalists.

To capture the idea of having a tax deduction for the salary of journalist and other editorial expenses, let us reformulate equation (8) to

$$(10) \quad \pi_i = \left(\frac{p_i}{1+t} - c \right) D_i + r(a)D_i - (1 - T) \frac{\varphi}{2} q_i^2.$$

¹⁵ From the mid 1930s to 1998, journalists and some other newspaper employees in France could deduct 30 % of their income as professional expenses. Through this arrangement newspapers also saved 30 % on their social insurance payments. The value of this deduction corresponded to about one month’s pay (Thogmartin, 1998, p. 343). Since 1998 the automatic deduction for professional expenses has been fixed at € 7650. (This is regulated in circular BOI 5 F-14-99 from the French Tax Administration.)

The newspaper can deduct a greater share of their investment costs the larger is T ($0 \leq T < 1$).

Denoting the equilibrium price, quantity and quality by p_i^* , D_i^* and q_i^* , respectively, we find that the profitability effect of investing in journalism can be written as

$$(11) \quad \frac{d\pi_i}{dq_i} = \left[\left(\frac{p_i^*}{1+t} - c \right) + r(a) \right] \frac{dD_i^*}{dq_i} + \frac{D_i^*}{1+t} \frac{dp_i^*}{dq_i} - (1-T)\varphi q_i^*.$$

The number of readers increases if the newspaper invests more in journalism, $\frac{dD_i^*}{dq_i} > 0$. The first term on the right-hand side of equation (11) thus shows that the larger is the profit margin of selling the newspaper, $\left(\frac{p_i^*}{1+t} - c \right)$, and the value of a new reader in the advertising market, $r(a)$, the greater is the marginal profit of investing in journalism. We further have that $\frac{dp_i^*}{dq_i} > 0$, since the willingness to pay for the newspaper is increasing in its perceived quality level. Therefore the second term in (11) is positive, and more so the larger the number of subscribers, D_i .

The last term in (11) shows that a higher T reduces the marginal costs of investing in journalism. In equilibrium, where marginal revenue of investing in journalism is equal to marginal costs, it must thus be true that q_i is increasing in T . The newspaper will consequently employ a larger number of journalists the greater the marginal tax deduction rate, T .

Other things equal, a tax deduction for editorial expenses will not affect the competitive pressure between newspapers, nor the relative importance of the advertising market compared to the reader market. This means that the newspapers' differentiation incentives will be independent of T . To gain some further insight into the effects of tax deduction for editorial expenses in an easy way we can therefore abstract from competition, and consider a monopoly newspaper. We further simplify utility function (7) to $U_i = v + q_i - p_i - wx_i$ and set $t = 0$ (no value added taxes). It can then be shown that in equilibrium we have $q_i = [(4(v - c) + \alpha^2)] / \{4[2w\varphi(1 - T) - 1]\}$, with

$$(12) \quad \frac{dq_i}{dT} = \frac{D_i}{\varphi(1-T)^2} + \frac{1}{\varphi(1-T)} \frac{dD_i}{dT}$$

Tax deduction for editorial expenses thus increase investments in journalism directly because it reduces the marginal investment costs as captured by the first term in (12), and indirectly because the higher investments in turn increases newspaper circulation – as captured by the second term.

It is a general rule that policy makers need at least as many instruments as goals. The theories presented in this section indicate that tax deduction for editorial expenses is a well suited instrument for increasing journalistic investments, while a preferential VAT regime for newspaper sales provides higher differentiation incentives between existing newspapers.

3.3 Direct subsidies

Direct media support is usually given as cash transfers or payment for government advertisement, to targeted newspapers, i.e. newspapers with a small advertising base, minority language newspapers, ideological stances newspapers etc. Such transfers are easily incorporated in the framework presented above by including a fixed transfer (lump-sum subsidy) from the government to the newspaper, $F_i \geq 0$. The profit function is then

$$(13) \quad \pi_i = \left(\frac{p_i}{1+t} - c \right) D_i + r(a)D_i - (1-T) \frac{\varphi}{2} q_i^2 + F_i$$

As long as the transfer is not a function of circulation or editorial costs in general, it is easy to show that such transfers will only affect entry and exit decisions of newspapers that would otherwise have negative profit. Hence, direct subsidies are an efficient instrument to reduce entry barriers or avoid newspaper mortality, but it will not affect editorial choices. Formally, this follows from the fact that the firms' first-order condition for optimal investments, equation (11), is independent of whether a fixed term F_i enters the profit functions. The reason is simply that neither marginal revenue nor marginal costs depend on

the size of the fixed transfer from the government. This is an important point which is often overlooked in public debates. A transfer that improves the profitability of newspapers will not make profit-maximizing newspapers invest more in journalism, but rather be passed on to the owners.

In theory it is easy to distinguish fixed transfers from other subsidization schemes. In practice it might be more difficult. In the tax deduction scheme recently put forward in Norway (NOU, 2010), for instance, the governmental commission proposed a 40 million NOK cap for the maximum tax credit given to any single firm. This cap will be a binding restriction for the largest newspapers, and thus reduces the total cost of the scheme significantly. However, for the newspapers where the cap is binding, the subsidy will have no effect on marginal costs. Rather, the subsidy will have the same effects as a direct transfer. It makes the owners wealthier, but does not increase investments.¹⁶ Another example is a special program just put in place by the Dutch government to foster employment and training of young journalists. The Ministry for Education, Culture and Science is paying the salary of about 60 newly educated journalists for two years to be hired by approximately 30 newspapers. The selection of journalists, how they are utilised and how their output is published, are left entirely to the newspapers (OECD, 2010; Nielsen and Linnebank, 2011). Since there are “no strings attached”, this support scheme comes very close to being a pure cash transfer. Commercial newspapers would prefer to let one of their previously employed journalists go, and instead hire a journalist with wages paid by the government. Aside from an adjustment period, the newspapers will have no incentive to expand the number of journalists.

According to Picard (2006, p. 213) “most types of support simply help pay variable costs rather than fixed costs”. Let us therefore consider the possibility that each media firm

¹⁶ A better way to limit the costs may be to differentiate the tax credit so that large newspapers get a lower deduction rate. The R&D tax credit in Netherland has this structure.

receives a direct subsidy of s Euro per copy it sells of its newspaper. The profit function can then be written as $\pi_i = \left(\frac{p_i}{1+t} - c - s\right)D_i + r(a)D_i - (1-T)\frac{\varphi}{2}q_i^2 + F_i$. Evidently, an increase in s is equivalent to a reduction of marginal production costs. For this kind of subsidy there are no qualitative differences between one-sided and two-sided markets; lower marginal costs reduce the optimal price and increase output.¹⁷ Hence, a subsidy per copy sold will directly address a policy goal of increasing circulation for existing newspapers. In this respect it complements the direct transfer, F_i , which increases the number of newspaper titles.

Note that neither the unit subsidy s nor the direct transfer F_i affect strategic choices or the relative importance of the advertising market relative to the consumer market. Compared to reduced VAT rates, unit subsidies are therefore more likely to be an efficient tool for increasing circulation, but will at the outset not affect newspaper differentiation. To take a historically relevant example; previously many countries subsidizes the postal rates that the newspapers had to pay. Whether we think within the context of a one-sided or two-sided market, we should expect this to lower newspaper prices but not to affect media pluralism.¹⁸

4 The effects of taxes and subsidies: Empirical analyses

Below, we give an overview over some of the empirical literature on the effects of taxing and subsidizing media products. Since the design of media policies is highly non-uniform both over time and across countries (c.f. the discussion of Finland below), we will not provide a detailed description of the policy tools that are actually used. It should also be stressed that media firms in many countries have become substantially more market oriented than they

¹⁷ See Kind *et al.* 2008 for a formal proof.

¹⁸ Subsidized postal rates might of course help smaller newspapers survive, but as discussed above this is most efficiently achieved through the fixed subsidy component F .

used to be. This is important to bear in mind, since for instance lump-sum subsidies might be expected to increase quality investments if newspapers primarily are run for political reasons, but not if they can best be described as being profit maximizing. In the same manner, newspapers might “afford” to reduce subscription prices if the VAT rates are low. This could be an important factor for ideologically driven publishers, while what is important for commercial publishers is not which price is “affordable” but which price maximizes profits. A given set of policy tools could thus be efficient in the 1970s but not today, and vice versa.

4.1 Empirical analyses of direct media support

Apart from political considerations, which clearly are important, the qualitative arguments for and against direct subsidies build to a large extent on the same underlying theories in the media sector as in more traditional industries.

In an interesting article, Murschetz (1998) provides a comparative study of state support to the daily press in Austria, France, Norway and Sweden. All these countries have over a long period of time employed extensive interventionist policies, direct as well as indirect. At the time of Murschetz’ study, the support consisted of e.g. postal and telecommunication rate advantages, support of journalistic training and education, and exemption from VAT. Murschetz discusses these subsidization schemes in some detail, and argues that Sweden commonly is held as a “shining example of a country which has a politically neutral allocation of subsidies to its press”. More specifically, the country had a fixed rule which granted general selective production subsidies if and only if a newspaper had 40 % or less household coverage in the relevant area (p. 303).¹⁹ Norway had a somewhat similar system. In France and Austria, on the other hand, Murschetz argues that the support system was much more vulnerable to and governed by political factors. In both these countries he

¹⁹ See also Murschetz (2009).

found that the media support system harmed competition and froze the market power of the big, established newspapers. Arguably, this lends support to the minimalist approach taken in Anglo-Saxon countries.

A major challenge for the newspapers in the period investigated by Murschetz was competition in the advertising market from evolving commercial broadcasters (already in place for all countries in the study except for Austria). This is somewhat similar to the growing competition from internet firms like Facebook and Google that newspapers face today. Market imperfections might then call for temporary adjustment aid. However, findings in the literature are quite disappointing in this respect. Indeed, Picard and Grönlund (2003, p. 4) argue that “most subsidies in Europe have had little effect on financial situations of newspapers and do not provide a mechanism for real long-term viability of subsidies for newspapers”. They argue that a main reason for this is that the existing subsidies typically attack variable costs rather than fixed costs. Consistent with this, Picard and Grönlund (2003) find that instead of promoting a variety of viewpoints, Finnish press subsidies have primarily benefited the press of the dominant political parties, thus resembling the results found for France and Austria in Murschetz (1998). Noteworthy, Finland has subsequently abolished almost all direct press subsidies; down from Euro 14.2 million in 2007 to Euro 0.5 million in 2008 (NOU, 2010, p.50). Now the subsidies go directly to political parties, which in turn might reallocate the funds to the party press.

There are very few studies of how press subsidies affect company performance. One exception is Picard (2003), who combines data on Swedish press subsidies and newspapers’ accounting figures. The investigated subsidies were provided to financially weak newspapers. An important insight from this study is the clear indication that the funding authorities perceive the subsidies as operating aid (though such subsidies are at odds with EU laws). If this is also the view of the newspapers, then there is clearly a danger that they will have small

incentives to restructure and adjust to market conditions so as to become economically viable on their own. In the words of Picard (2003, p. 106), the net result might be that the subsidy scheme creates a dependency culture where “the needs of the audience are ignored, and inefficiency is subsidized”. This is a well-known effect which is found in many international studies of other industries, c.f. the discussion above on the infant industry literature. The subsidies help low-coverage newspapers to survive, but does little to solve the structural problems in the industry. Even worse, a large share of the subsidies might end up in the pockets of commercial media firms that do not serve any specific social purposes. According to Picard (2006, p. 213) this problem has been particularly severe in Sweden, “where publishers often make operational and strategic choices to ensure their continued subsidization rather than improvement of their papers”.

Gustafsson (2007), who’s views partly contradict those of Picard, provides an overview of the evolution of Swedish press subsidies. A direct press subsidy – given to subscription newspapers in financial distress – was proposed already in 1963, though not implemented until 1971. Importantly, this aid was intended as on-going production support (as found by Picard, 2003) and not investment funding. Gustafsson describes the support system in some detail, and argues (p. 13) that it was the first and only government funding scheme with roots in competition theory. He further argues that the subsidies created healthy competition between high- and low-coverage newspapers, resulting in higher quality also in the newspapers that did not receive any subsidies. In stark contrast to non-interventionists, Gustafsson claims that the press subsidies increased media pluralism by giving mouthpieces to new political movements, and he dismisses the idea that the subsidies should be given on a “help-people-to-help-themselves” basis. The reason why this would not work, he argues, is that there are strong barriers to growth in the newspaper industry, not least because it is difficult for low-coverage newspapers to compete on the advertising market. Yearly subsidies may therefore be necessary. Gustafsson (p. 56) actually praises the subsidy system by stating

that “The fact that there is still a diverse range of Swedish daily newspapers in 2007 is due to the production support that the government introduced in 1971 to assist daily papers in a weak competitive position.” He then concludes by forcefully claiming that only a selective support system can work; such a system weakens market forces and benefits low-coverage newspapers, while a general support system strengthens market forces and thus also high-coverage newspapers at the expense of low-coverage newspapers.

In a broader survey of the development of the newspaper market in Europe since the 1970s, Gustafsson (2004) likewise argues that the Swedish subsidy system was the “main power” behind the relatively large number of newspaper start-ups in Sweden between 1975 and 2000.²⁰ However, it should be noted that Gustafsson does not provide any cost-benefit analysis, making it difficult to assess whether the policy really is worth its price even if it works. This is by no means unique for Gustafsson’s studies; there barely exists any thorough cost-benefit analysis of either direct or indirect press subsidies in any country (see Sánchez-Taberner, 2006, for a short discussion of some elements to consider in such an analysis).

4.2 Empirical analyses of indirect media support

While direct media support is hotly debated in most countries, indirect media support is rarely subject to scrutiny. In many cases indirect support has a long history embedded in law, and the instruments have modest visibility as they, more or less by definition, are not allocated over government budgets. This also makes it difficult to calculate their exact value. Nevertheless, several attempts to estimate the importance of indirect media subsidies have been made. Nielsen and Linnebank (2011), for example, present estimates showing that the value of indirect press support far outweighs the value of direct press support in all the six countries they review; Finland, France, Germany, Italy, United Kingdom and the United States.

²⁰ Exactly the same claim has been made for Norway, see NOU (2010, p. 89).

The most important form of indirect support is VAT reductions and exemptions. According to OECD (2010, Table 6), Belgium, Denmark, Finland, Korea, Luxembourg, Mexico, Norway and United Kingdom have full VAT exemption for newspapers, while Austria, Czech Republic, France, Germany, Hungary, Iceland, Italy, Netherlands, Poland, Portugal, Spain, Sweden, Switzerland and Turkey have a reduced rate. This implies that the newspaper industry is heavily subsidized, and one can only wonder why there is so little academic interest in evaluating the effect of the subsidies. In comparison, there is a vast and highly advanced industrial economics literature on e.g. R&D subsidies and agricultural subsidies.

Although the literature on indirect media support is small, interest in the topic is increasing. A strong technological push for restructuring of the media industry has put media support on the political agenda in many countries. The size of the indirect subsidies makes it likely that these policy instruments, in particular low VAT-rates, will come under pressure. First, committees considering reforms are typically asked to present at least one alternative that does not increase the total support. Second, fiscal difficulties faced by many countries suggest that all VAT exemptions are likely to be re-examined as VAT is a very important source of tax revenue.

Finnish politicians have already taken action. In late 2011, the Finnish parliament passed an act introducing a new value added tax on newspaper and magazine subscriptions valid from January 1st, 2012. The new 9 percent tax on newspaper and magazine subscriptions took the media industry by surprise. Previously, the printed press was subject to a 23 percent tax on advertisements and single copy selling, but enjoyed full VAT exemption on subscriptions (Hyvönen, 2012).

In Denmark the Ministry of Culture in 2009 published a report which discusses the consequences of increasing the VAT rate on newspapers (Rambøll Management Consulting, 2009). A similar report was published by the Norwegian Ministry of Culture one year later

(NOU, 2010). The Danish Report points out two main consequences of abolishing the VAT exemption for newspapers. First, it will improve the competitiveness of e.g. electronic newspapers, because the price of paper-based newspapers will increase. Second, and as a direct consequence of the price increase, the consumers who buy paper-based newspapers will be harmed. The Danish report neglects the fact that newspapers serve both advertisers and readers, and thus that they operate in two-sided markets. This neglect means, for example, that the Report's estimation of demand elasticities on the reader side of the market says very little about the consequences of higher newspaper taxes. The interdependence between the reader and the advertising market seems to be missing in public debates also in other countries that consider the possibility of increasing the VAT rate on newspapers. Even if the two-sidedness of the newspaper market is acknowledged, as e.g. in the Norwegian report on media support, little can be said about the full effect since it has not been studied empirically.

There exist a few empirical assessments of the effect of VAT-exemption, but they disregard the two-sidedness of the market. Both De Bens and Østbye (1998, p. 13) and McQuail and Siume (1998, p. 13) cite an analysis by Price Waterhouse which argues that if the VAT on newspapers in the UK in the 1990s had been increased from 0 % to 6 %, then most UK regional dailies would disappear, and the circulation of the national dailies would fall by 10 %. Similarly, a recent Norwegian report, Wilberg (2010), commissioned by the Norwegian Media Businesses' Association, paints a very gloomy picture of the consequences of VAT on newspapers using informed judgment based on detailed industry knowledge, company performance data and forecasting techniques.

The only study we are aware of that utilizes an exogenous shift in the VAT rate is Gustafsson (2007, p. 29-30). Unfortunately, this is neither an econometric analysis nor an analysis of VAT as such. Gustafsson describes the development in aggregate circulation for

Swedish subscription newspapers. The average annual decrease in circulation from 1989 to 2007 was about 1 %. In 1996, however, the drop in circulation was more than 4 %. He explains this drop by the introduction of a 6 % VAT on newspapers that year, causing a price increase of 10 – 11 %. This was twice as much as the normal price increase.

Another Swedish policy change towards the publishing industry is discussed by Copenhagen Economics (2007, p. 82) and NOU (2010, p. 94) building mostly on Ahlmark (2004). In December 2002 the Swedish parliament decided to reduce the VAT on books from 25 % to 6% in response to increasing competition from internet bookstores located in low-VAT countries. The VAT reduction was immediately reflected in lower prices, and even the long-run pass-through was close to full. However, since book publishers operate in one-sided markets, the transfer value of this study to the newspaper market is limited. It should also be noted that Ahlmark (2004) is written for the Swedish booksellers and publishers' associations in response to a more negative assessment by the Council for Official Statistics. It is obviously a weakness that much analysis in this area is both industry financed, and not published in peer reviewed channels.

We are aware of only one relevant analysis of VAT that is published in a scientific journal. That is Depken (2004), who analyzes the effect of VAT on the market structure in the magazine industry, utilizing cross sectional variation in VAT rates between 23 countries. He finds that “a one-unit increase in an ad valorem tax (e.g., from 6% to 7%) correlates with a reduction in 21 consumer magazine titles, on average, and 52 business titles”. In a country with an average number of consumer and business magazines, these numbers correspond to a 2.1 % and 3.9 % decrease in magazine titles, respectively. These numbers are arguably surprisingly high, and underline the need for further studies.

Taken together, the scant evidence reviewed above suggests that an increase in the VAT rate for newspapers will negatively affect circulation and survival. This, however, is only a

partial input to a cost-benefit analysis. Direct transfers will be a more efficient way to help newspapers that are threatened by a shutdown.

5 Concluding remarks and some path for future research

The media industry has for decades received substantial subsidies. While other types of industry support are frequently evaluated, media support has received little attention from economists. This is unfortunate. The media industry is important economically, politically and culturally. It is rapidly changing and has characteristics that require specialized models.

The literature has identified several types of market failure in the media industry. Knowledge externalities, public good characteristics of investigative journalism and non-appropriability of consumer surplus all suggest that the social value of journalism is much larger than what the newspapers are able to extract. This indicates that a free market will underinvest in journalism. Problems related to economies of scale and scope may further imply that newspaper prices are too high (too small circulations) and the number of newspapers too small. The presence of an advertising market may give newspapers too strong incentives to aim for the mass market, resulting in too little media diversity. Low VAT rates may reduce this latter problem, since it makes the advertising market relatively less important for newspaper profits.

Tax credits or other indirect subsidy schemes that directly reduce the marginal cost of investing in journalism are the most efficient scheme to increase the quality and quantity of journalism and stimulate investigative journalism. Tax credit schemes are widely used in OECD countries to promote R&D investments, but not much used as a media policy instrument. We believe they deserve far more attention from both academics and policy makers who reflect on how to secure high quality journalism when the traditional business model of the media industry is eroded by the internet and more or less free distribution of news.

Identifying a market failure is not in itself an argument for policy intervention, however. It is also important to keep an eye on potential government failure and how lobbying may distort the implementation of efficient policy measures. Press associations dominated by large and profitable newspapers may e.g. push for further VAT breaks or zero VAT-regimes, rather than potentially more efficient subsidy regimes that they themselves will not benefit from. In terms of political economy, one should also notice that entrants to digital platforms may have very different interests from incumbent media firms. Typically, entrants also command less resources and have smaller incentives to invest in lobbying since the gains they obtain will stimulate further entry and competition, as noted by Baldwin and Robert-Nicoud, (2007). Finally, it is important to bear in mind that there are large welfare losses associated with tax payments because taxes lead to inefficient adjustments in goods- and labour-markets. Some studies argue that the effective cost for each one million of subsidies can be as high as two million (as measured by the marginal cost of public funds, MCF). This is the major reason why very few sectors of society are subsidised, even in cases where large market imperfections can be proven.

In order to evaluate the effect of direct and indirect press subsidies, both formal modelling skills and modern econometric tools are needed to identify the full causal effects. One can hope that economists will take up the challenge. This needs to be done in cooperation with media scientists as some of the effects that should be evaluated demand methodologies for content analysis. We believe two issues are particularly pressing and doable. One is panel data analyses utilising the significant variation in VAT rates that the publishing industry faces within and between countries. This might help to assess the effects of VAT reduction schemes on newspaper circulation and diversity. Another is to analyse the effect of monopolized regional newspaper markets. The extensive subsidy regimes that were introduced in many European countries after World War II were largely motivated by newspaper mortality, but increasing concentration in the newspaper industry has nonetheless been a striking trend

(Picard, 2006). Every exit of a number 2 newspaper is an experiment that allows media scientists to explore how newspaper competition matters for the profile and quality of “number 1 newspapers”. These events have not been explored to the extent one would expect given the emphasize newspaper mortality has in the policy debate.²¹ In particular, there seems to be little work on the effect of media competition by European media scientists. More work on the importance of local newspapers, similar to the innovative study by Bruns and Himmler (2011), is also called for.

²¹ See Trim, Pizante and Yaraskavitch (1983) for an early and interesting study of this kind. They report a significant decline in the quantity and quality of news in the aftermath of two Canadian cities going from being “two newspaper-towns” to “one newspaper-towns”. In a very recent study, Drago et al. (2014) evaluate effects of newspaper entry and exit in Italian cities using data from 1993-2009. They find that newspaper entry increases turnout in municipal elections, the reelection probability of the incumbent mayor, and the efficiency of the municipal government.

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